1. All higher species have relationships of power, social organization, and production. Human beings mediate all of those relationships by means of thought, which is why we have more than an evolutionary history.

2. We change our thinking about the natural order—about what is out there (ontology, i.e., our speculation about kinds of existence and kinds of beings), why things happen (causality), and what knowledge itself is (epistemology).
The history of our abstract thought is therefore an essential part of understanding ourselves as historical phenomena.

1. Changes in our thinking and understanding alter our very relationship to nature (including to social phenomena).

2. Every generation and civilization tends to think of its own way of thinking about the world (and about thinking itself) as somehow “natural.” Intellectual history—the study of human intellectual behavior over time—teaches us, however, that our thought has a history, of which our way of thinking is the product. Learning that history, we see our own thought in relationship to its origins and to the often unintended consequences of those origins.

The intellectual revolution of the seventeenth and eighteenth centuries was far more profound in its consequences for the human condition than any political or social revolution of the early modern period, and itself contributed crucially to revolutions in European life.

1. If a culture changes the way it thinks about truth, nature, the knowable, the possible and impossible, and the causes of things, it will alter its expectations and behavior in almost all areas of human life.

2. If a culture changes the way it thinks about using mind properly, it changes the way that it thinks about almost everything.

3. A conceptual transformation is not confined to areas of thought alone. For example, to change one's evaluation of the force of inherited intellectual authority is to change one's whole attitude toward authority in general. To change one's attitude to the limits and possibilities of human life is to change one's expectations of and relationship to almost everything around one. This transformation occurs in the seventeenth and eighteenth centuries.

3.1. The seventeenth century brought a conceptual revolution in often very abstract terms. It initiated a struggle for who shall be the teachers of a civilization and what will be the lessons taught.

3.2. The eighteenth century brought a revolution in culture marked by the popularization of the conceptual revolution of the seventeenth century and by an extension of its consequences to new areas of human thought and activity.

3.3. A telling example involves how we get to “the pursuit of happiness” as the very purpose of human society.
The culture of the early modern intellectual revolution was very different from our own.

1. The subsistence economy of the time allowed only a few the necessary freedom from labor to study and think.

2. Travel was expensive and dangerous, and paintings were few. There were no media of mass communication to give one a window onto other times, places, and minds beyond one's provincial gaze.

3. Books brought with them an intense culture of close reading, logical argument, and pride in erudition and formal thought.

4. Our window onto the culture of that time is the texts that it produced, and the context in which those texts were written.

The Dawn of the Seventeenth Century: Aristotelian Scholasticism
In the educated world, that intellectual inheritance was a fusion of Aristotelian (and other Greek) philosophy and of Christian theology; it was known as “scholasticism” or, more precisely, as Aristotelian scholasticism.

1. Its means of teaching and persuasion was the disputatio (disputation), based upon (in order of importance) intellectual authorities, logical deduction from these authorities, and the appearances of the world.

2. This system dominated the universities and schools of Europe. Thinkers believed that it brought coherence to the world, explaining the nature of all things in terms of their “material, formal, efficient, and final causes.” By distinguishing among all beings in terms of the degrees of their “perfections,” scholasticism created a “great chain of being” that permitted us to know contemplatively the value of all things.

3. The science of final causes (teleology) permitted us to know contemplatively the purposes of things, and to grasp how, under God’s design, all things strove for God’s created order.

4. The seventeenth century marked a momentous assault upon all aspects of the Aristotelian scholastic synthesis.
Overview of the intellectual inheritance of the seventeenth century.

1. At the dawn of the seventeenth century, the dominant philosophical system was Aristotelian scholasticism—the philosophy of Aristotle as interpreted and adopted by the Christian schools of Europe.

2. This system linked Aristotelian philosophy to Christian doctrine and provided the intellectual world of the seventeenth century with answers to fundamental questions such as: When should I be convinced? What should I find persuasive? When must I say, “Yes, I have to believe that?”

In Aristotelian scholasticism, philosophical arguments took the form of the disputatio (disputation). The disputatio emphasized three factors that compelled belief: authority, reason, and experience.

1. Authority was either supernatural or natural.
   1.1. Supernatural authority was based on Scripture, as correctly understood by appropriate authorities.
   1.2. Natural authorities were based on the presumptive authority of the past (what had stood the test of time) —above all, the Greeks.
   1.3. The authority of ancient authors and texts was integrated into Christian theology and intellectual life, especially when the thought of those ancient authorities helped to explicate the truths of the Christian faith.

2. Reason—and especially the principle of non-contradiction—was another source of belief.
   2.1. There are two modes of reason: inductive and deductive.
   2.2. The model appropriate to the practice of the early seventeenth century was deductive reason, by which one derived what follows logically from things known by authority.

3. Experience was viewed not as the stuff of inductive logic, nor as a systematic means of inquiry, but instead as an illustration of things known by authority and logical deduction.
According to Aristotle, there are four components to the system of causality.

1. The material cause is the stuff from which something is made (e.g., the marble of a marble statue).

2. The formal cause is the particular form (e.g., the statue of Alexander the Great) realized from the stuff of the material cause (e.g., the marble). The material cause is the stuff from which something is made (e.g., the marble of a marble statue).

3. The efficient cause is what brings the form into actual existence from the matter (e.g., the sculptor with hammer and chisel).

4. The final cause is the reason or purpose of the action (e.g., the end pursued by the sculptor). The science of final causes is “teleology.”

Operating principles allow us to distinguish among these causes.

1. From distinctions among the essences brought into being in forms, we have a scale of perfections, at the top of which is God. We have a measure of the value and importance of everything.

Aristotelian scholastic perspectives confer a distinct understanding of the world.

1. Under God’s design, all things strive for His order, for the fulfillment of His purposes.

2. The world is a Great Chain of Being, a hierarchy of perfections. Given the mutable things of the earth and the immutable things of the heavens, there is a fundamental divide between sublunar and celestial beings and phenomena.
The system and its consequences.

I. This is the system that had emerged officially triumphant after all the intellectual wars of the Renaissance and the sixteenth century, enshrined in the official curricula of the secondary schools and universities of Western Europe.

Nicolaus Copernicus (1473-1543). Polish astronomer and physician whose theory of a moving Earth eventually redirected astronomy. Copernicus spent years studying in Italy after graduating from Jagiellonian University in Krakow and became proficient in Greek, translating into Latin the work of an ancient Greek poet recovered by the Humanists. It is interesting that Copernicus used virtually the same data that Ptolemy used yet reached dramatically different conclusions.
Francis Bacon (1561-1626). Statesman and philosopher, Bacon undertook a fundamental revision of human inquiry and knowledge. The son of a powerful Tudor politician, Bacon studied at Trinity College, Cambridge, became a barrister, and rose to the position of Lord Chancellor of the kingdom, becoming the Baron Verulam and the Viscount of St. Albans. He was dismissed from power in 1621 for bribery, a common charge in the perilous world of Tudor-Stuart politics, and he spent the final years of his life working on his great philosophical project, the Instauratio Magna, of which one vital part, the Novum Organum became his most influential legacy.
From the end of the sixteenth century until his death, the politician and philosopher Francis Bacon (1561-1626) undertook to criticize the Western intellectual inheritance, to transform the human quest for knowledge, and to put knowledge at the service of gaining power over the forces of nature upon which our suffering or well-being depended.

1. For Bacon, the many causes of error (the Idols of the Mind) hindered us from understanding the world as created by God. The key to overcoming error was correct method, which for Bacon meant induction from the particulars of nature to general principles that could be tested experimentally.

2. His most essential work, The New Organon, argued that such an inductive, experimental science, free from the dead weight of the past, could yield a new kind of knowledge that would be dynamic, cumulative, and useful. His ultimate vision was that human beings, if governed by charity, could use knowledge to alter their relationship to nature and society on behalf of “the effecting of all things possible.”

Bacon was dissatisfied with the Aristotelian scholastic orthodoxy that reigned in the universities of sixteenth-century Europe.

1. A contemporary wrote that it was at Cambridge that Bacon “first fell into the dislike of the philosophy of Aristotle... being a philosophy only strong for disputations and contentions, but barren of the production of works for the benefit of mankind.”

2. Bacon argued that the European philosophical tradition stood condemned on two main grounds.

2.1. It had mixed religion and natural philosophy, to the confusion of both.

2.2. It had substituted concern for words in place of concern for things.

3. For Bacon, European thought had become enslaved to the systems of five or six Greeks. These systems had infected Europe’s relationship with nature.
Bacon sought in two fundamental ways to win readers to his redefinition of the goals of human knowledge.

1. New kinds and methods of knowledge would make possible an expansion of human empire over the phenomena on which our suffering or well-being depend.
2. The Christian ethic entails knowledge in the service of charity, which means that the fruits of knowledge must permit one to enhance the condition of one’s fellow creatures.

Bacon’s New Organon—his new instrument or method for acquiring useful knowledge—was his most essential work. In it he set forth his “Great Instauration.”

1. The New Organon had four essential and profoundly influential themes.
   1.1. Knowledge is human power.
   1.2. Natural philosophy (science) is separate from theology.
   1.3. Scientific knowledge requires the method of induction, from particulars to generalizations, always tested by experiment and open to revision.
   1.4. Science is a dynamic, cooperative, and cumulative enterprise.
Bacon’s New Organon—his new instrument or method for acquiring useful knowledge—was his most essential work. In it he set forth his “Great Instauration.”

2. Bacon cautioned Christians against worshiping false “Idols of the Mind” rather than God’s actual creations.
   2.1. Idols of the Tribe are sources of error inherent in human nature.
   2.2. Idols of the Cave are the particular biases of individual men.
   2.3. Idols of the Marketplace result from the ambiguity of words.
   2.4. Idols of the Theatre are our received philosophical tradition, worshipped under the notion of authority, especially that of Aristotle.

In the New Atlantis, Bacon examined the place of natural knowledge in society.

1. In Bacon’s utopian vision, all human beings would govern their relationship to nature and society on behalf of their own interest in human well-being.

2. The instrument of mankind’s betterment was knowledge methodically drawn from patient observation and experiment, “to the [end of] effecting of all things possible.”
Outline Source

The Birth of the Modern Mind: The Intellectual History of the 17th and 18th Centuries
by
Professor Alan Charles Kors

THE TEACHING COMPANY ®